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CONTENTS:

Nomenclatorial Transfers in Mariscus. *M. L. Fernald* 49
North American Species of Limonium. *S. F. Blake* 55
Reports on the Flora of the Boston District,—XL. 60
Salix serissima on Long's Peak. *F. W. Hunnewell* 67
Lepachys columnaris in eastern Massachusetts. *C. W. Jenks*. 68

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THE NEW ENGLAND BOTANICAL CLUB

Vol. 25. April, 1923. No. 292.

NOMENCLATORIAL TRANSFERS IN MARISCUS.

M. L. Fernald.

The chiefly austral genus which has long passed as *Cladium* must, as pointed out by Schinz & Thellung[1] in 1908 and, upon different grounds, by Otto Kuntze in 1891,[2] take the generic name *Mariscus* Zinn. Briefly, the case is as follows.

Mariscus was a pre-Linnean genus of Haller,[3] embracing the characteristic European plant with serrate leaves, which had been called by Scheuchzer *Pseudocyperus palustris, foliis & carina serratis.*[4] In the *Species Plantarum* Linnaeus treated it as a species of *Schoenus,* taking up Haller's name and calling the plant *Schoenus Mariscus.*[5] In post-Linnean time *Mariscus* was apparently first taken up by Zinn,[6] who in 1757 properly defined the genus which consisted of Haller's *Mariscus,* the *Schoenus culmo tereti, foliis margine dorsoque aculeatis* of Linnaeus and *Cyperus longus inodorus Germanicus* of Bauhin; in other words *Mariscus* of Zinn was the same as *Schoenus Mariscus* L., which had been based upon the identical references; and Zinn was followed in using *Mariscus* by Boehmer[7] in 1760. In 1756 Patrick Browne described under a new generic name, *Cladium,*[8] the characteristic West Indian plant, but the genus *Cladium* itself was not defined, merely the one species under it; Browne's practice being to use a generic name and under it to describe the different

[1] Schinz & Thellung, Vierteljahrs. Naturforsch. Gesells. Zurich, liii. 523 (1908).
[2] Kuntze, Rev. Gen. Pl. i. 754 (1891).
[3] Haller, Enum. Stirp. Helvet. 251 (1742).
[4] Scheuchzer, Gram. 375 (1719).
[5] L. Sp. Pl. i. 42 (1753).
[6] Zinn, Cat. Pl. Hort. Gott. 79 (1757).
[7] Boehmer in Ludwig, Defin. Gen. Pl. 423 (1760).
[8] P. Br. Hist. Jam. 114 (1756).

species. The name *Cladium*, then, as published by Browne was, unfortunately, a *nomen nudum*, which seems not to have been properly accompanied by a generic characterization until 1766 when Crantz[1] validated it by giving a generic description and citing a single species, *C. jamaicense* (published *iamaicense*). It was next properly taken up in 1806, when it was defined by Schrader[2] who included two species, *C. germanicum* (*Schoenus Mariscus* L.) of Europe and *C. occidentale* (*Schoenus Cladium* Sw.) of the West Indies. Subsequently the name *Cladium* has come into universal use and the name *Mariscus* Gaertn. (1788) has been generally maintained for a group closely allied to and only unsatisfactorily separated from *Cyperus*. It should be clear, however, that *Cladium*, which was not properly defined as a genus until 1766, must be replaced by the properly described *Mariscus* [Haller] Zinn (1757).

It is somewhat surprising that practically all modern European students have failed to recognize the specific differences which separate their common plant, *Mariscus serratus* Gilib.[3] (*Schoenus Mariscus* L., *Cladium Mariscus* Pohl) from the tropical American *M. jamaicensis* (Crantz) Britton (*Cladium jamaicense* Crantz., *Schoenus Cladium* Sw.) and the Hawaiian *M. leptostachyus* (Nees) Kuntze. Thus, in such works as Richter's *Plantae Europae*, i. 144 (1890) *Schoenus Cladium* Sw. of Jamaica and its synonyms, *S. effusus* Sw. and *Cladium occidentale* R. & S., as well as the Hawaiian *C. leptostachyum* Nees, are included without question as synonyms of the continental and northern European *C. Mariscus* (L.) R. Br.; and in their discriminating notes on the nomenclature of European plants Schinz & Thellung (*l. c.*) take up for the European species the name *M. Cladium* (Sw.) Kuntze based upon the Jamaican *Schoenus Cladium* and carrying the synonyms *S. jamaicensis* Crantz and *Mariscus jamaicensis* (Crantz) E. Janchen; and the late C. B. Clarke,[4]

[1] Crantz, Inst. i. 362 (1766).

[2] Schrad. Fl. Germ. i. 74 (1806).

[3] Gilib. Exercitia Phyt. ii. 512 (1792). This work is so rare that apparently there is no copy in America. Gilibert's account, for which I am indebted to the kindness of Dr. Arthur W. Hill, Director of the Royal Botanical Garden, Kew, was as follows:

"19. Mariscus serratus.

Radix repens. Culmi quatuorpedales. Folia margine dorsoque aculeata. Flores paniculato-ramosi; calycis glumae paleaceae, fasciculatim congestae; corolla nulla: semen unum, subrotundum, inter glumas.

Schoenus mariscus L. non rara in paludosis locis, circa Grodnam Jeziory, & alibi; florens julio: perennis. Lugdunea. Protectis tegendis loco straminis inservire potest: sero crescit; paludes replet; insulas natantes constituit."

[4] Clarke in Urban, Symb. Antill. ii. 134 (1900).

taking up Crantz's *Cladium jamaicense* for the West Indian plant, cited without question in the synonymy *C. germanicum* Schrad., *C. Mariscus* R. Br. and *Schoenus Mariscus* L. It would indeed be surprising if a plant which abounds over continental Europe and northward as a dominant species to the British Isles and Scandinavia were specifically identical with a dominant plant of the West Indies, tropical South America and the Gulf States of North America; and, as would be expected, study of large series of the two brings out abundant specific differences. The European *M. serratus* is a much lower plant, with less diffuse inflorescence, and its glomerules consist of more numerous and longer spikelets. In the tall (up to 3–4 m.) *M. jamaicensis* the scarious bases of the involucres and involucels are ciliolate, in *M. serratus* entire; and in *M. jamaicensis* the ovoid to subglobose abruptly beaked pale brown to olivaceous achenes are opaque or only slightly lustrous and obviously rugulose or pebbled, in *M. serratus* lance-ovoid, gradually attenuate, castaneous, highly lustrous and smooth.

The bibliography of the two is as follows:

Mariscus serratus Gilib. Exercitia Phyt. ii. 512 (1792). *Schoenus Mariscus* L. Sp. Pl. i. 42 (1753). *Cladium germanicum* Schrad. Fl. Germ. i. 75, t. v. fig. 7 (1806). *C. Mariscus* (L.) Pohl, Tent. Fl. Bohemiae, i. 32 (1810); R. Br. Prodr. 236 (1810). *M. Cladium* Kuntze, Rev. Gen. Pl. i. 754 (1891) and Schinz & Thellung, Vierteljahrs. Naturforsch. Gesells. Zurich, liii. 523 (1908), as to European plant, not *Schoenus Cladium* Sw.

M. jamaicensis (Crantz) Britton in Small, Fl. Miami, 31 (1913) as *M. jamaicense*; E. Janchen in Schinz & Thellung, Vierteljahrs. Naturforsch. Gesells. Zurich, liii. 524 (1908) as synonym only. *Cladium jamaicense* Crantz, Inst. i. 362 (1766) published as *C. iamaicense*. *Schoenus Cladium* Sw. Prodr. 19 (1788), Fl. Ind. Occ. i. 97 (1797). *S. effusus* Sw. Prodr. 19 (1788). *S. Mariscus*, β *effusus* (Sw.) Pers. Syn. i. 58 (1805). *C. occidentale* Schrad. Fl. Germ. i. 76 (1806). *C. palustre* Poir. ex Schultes, Mant. i. 229 (1822). *C. effusum* (Sw.) Torr. Ann. Lyc. N. Y. iii. 374 (1836). *M. Cladium* (Sw.) Kuntze, Rev. Gen. Pl. i. 754 (1891) at least as to name-bringing synonym.

In organizing the species in the Gray Herbarium it has been necessary to make the following combinations.

M. **aromaticus** (Merrill), n. comb. *Cladium aromaticum* Merrill, Philipp. Journ. Sci., Bot. ix. 59 (1914).

M. **boninsimae** (Nakai), n. comb. *Cladium boninsimae* Nakai, Bot. Mag. Tokyo, xxv. 223 (1911).

M. **borneense** (C. B. Clarke), n. comb. *Cladium borneense* C. B. Clarke in Stapf, Trans. Linn. Soc., Bot. Ser. 2, iv. 245 (1894).

M. **californicus** (Watson), n. comb. *Cladium Mariscus*, var. *Californicum* Watson, Bot. Cal. ii. 224 (1880).

A beautifully distinct species extending from southern Nevada and southern California to the State of San Luis Potosi in Mexico. *M. serratus* (*Cladium Mariscus*) has widely creeping rootstocks and stolons; *M. californicus* is cespitose, forming hummocks described by Brewer as "1½ to 2 feet thick" (Brewer, acc. to Watson *l. c.*), while Jepson describes the plant as having "Stems numerous, stout, 6 to 10 feet high, forming very dense and heavy hummocks" (Jepson, Fl. Cal. 206). In *M. serratus* the erect inflorescence has glomerules of many spikelets; in *M. californicus* the diffuse drooping panicle has fewer (mostly 2–5) spikelets in a glomerule. In the European species the lustrous lance-ovoid achenes taper from near the middle very gradually to the apex; in *M. californicus* they are lustrous but of a broad cylindric-ovoid outline, with a very short tip. Besides the stations, San Gabriel, California and "Southern Nevada" originally given by Watson, Jepson cites others, at the bases of the San Gabriel and San Bernardino Mountains. Additional stations are as follows. New Mexico: along Pecos River, near Roswell, *D. Griffiths*, no. 5765, distributed as *Cladium effusum*. Mexico: border of water, Las Tablas, San Luis Potosi, *Pringle*, no. 5036; common in deep rich soil along the border of Media Luna, near Rio Verde, San Luis Potosi, *Palmer*, no. 62 (June, 1904).

M. **capillaceus** (Hook. f.), n.comb. *Chaetospora capillacea* Hook. f. Fl. Tasm. ii. 81. t. CXLI. A (1860). *C. capillaris* F. Muell. Fragm. Phyt. Austral. ix. 34 (1875). *Elynanthus capillaceus* (Hook. f.) Benth. Fl. Austral. vii. 377 (1878). *Schoenus capillaris* F. Muell. Second Cens. Austr. Pl. 215 (1889). *Schoenus tenuis* T. Kirk, Trans. N. Z. Inst. ii. 94 (1871). *Cladium capillaceum* (Hook. f.) C. B. Clarke in Cheeseman, Mem. N. Z. Fl. 789 (1906).

M. **chinensis** (Nees), n. comb. *Cladium chinense* Nees, Linnaea, ix. 301 (1835) and Nov. Act. Nat. Cur. xix. Suppl. i. 116 (1843). *C. japonicum* Steud. Syn. Pl. Cyp. 152 (1855).

Although referred by most recent authors to the European species, *M. chinensis* has very much smaller spikelets, as originally pointed out by Nees, and its pale achenes, only about one-third as large as in *M. serratus* are ellipsoid-ovoid and very short-tipped, rather than lance-ovoid and acuminate. Material of the Japanese plant with mature fruit is apparently inseparable from *M. chinensis*.

M. **colpodes** (Lauterb.), n. comb. *Cladium colpodes* Lauterb. in K. Schum. & Lauterb. Nachtr. Fl. Deutsch. Südsee, 59 (1905).

M. **complanatus** (Berggr.), n. comb. *Cladium complanatum* Berggr. Minneskr. Fisiog. Sällsk. Lund (1877), no. 8: 23, t. 6, figs. 1–5 (1878).

M. **delicatulus**, n. nom. *Cladium filiforme* Merrill, Philipp. Journ. Sci., Bot. v. 172 (1910), not *Mariscus filiformis* HBK. Nov. Gen. et. Sp. i. 213 (1816).

M. **Deplanchei** (Boeckl.), n. comb. *Baumea Deplanchei* Boeckl. Flora, lxi. 143 (1878). *Cladium Deplanchei* (Boeckl.) C. B. Clarke in Engler, Bot. Jahrb, xxxix. 26 (1906).

M. **distichus** (C. B. Clarke), n. comb. *Cladium distichum* C. B. Clarke, Philipp, Journ. Sci. ii. 102 (1907).

M. **ensiger** (Hance), n. comb. *Cladium ensigerum* Hance, Journ. Bot. xxiii. 80 (1885).

M. **falcatus** (Nees), n. comb. *Baumea falcata* Nees in Hook. Kew Journ. vi. 29 (1854). *Cladium falcatum* (Nees) C. B. Clarke, Kew Bull. Add. Ser. viii. 46 (1908).

M. **fallax**, n. nom. *Cladium cyperoides* Merrill, Philipp. Journ. Sci., Bot. vii. 74 (1912), not *Mariscus cyperoides* A. Dietr. Sp. Pl. ii. 348 (1833).

M. **ficticius** (Hemsl.), n. comb. *Cladium ficticium* Hemsl. Bot. Challenger Voy. iii. 59, t. 60, figs. 5–7 (1884).

M. **Gaudichaudii** (W. F. Wight), n. comb. *Baumea mariscoides* Gaudich. Bot. Freyc. Voy. 417 (1829). *Cladium mariscoides* (Gaudich.) Villar in Blanco, Fl. Philipp. ed. 3, iv. Nov. App. 309 (1880), not Torr. Ann. Lyc. N. Y. iii. 372 (1836). *C. gaudichaudii* W. F. Wight, Contrib. U. S. Nat. Herb. ix. 230 (1905).

M. **geniculatus**, n. nom. *Cladium philippinense* Merrill, Philipp. Journ. Sci., Bot. v. 171 (1910), not *Mariscus philippensis* Steud. Syn. Pl. Cyp. 66 (1855).

Although not strictly identical the specific names *philippensis* and *philippinense* are so similar that only confusion could result from transferring the latter to *Mariscus*.

M. **globiceps** (C. B. Clarke), n. comb. *Cladium globiceps* C. B. Clarke, Kew Bull. Add. Ser. viii. 46 (1908).

M. **hirtus** (Boeckl.), n. comb. *Machaerina hirta* Boeckl. Flora, lviii. 117 (1875). *Cladium hirtum* (Boeckl.) C. B. Clarke, Kew Bull. Add. Ser. viii. 46 (1908).

M. **Huttoni** (T. Kirk), n. comb. *Cladium Huttoni* T. Kirk, Trans. N. Z. Inst. ix. 551 (1877).

M. **Maingayi** (C. B. Clarke), n. comb. *Cladium Maingayi* C. B. Clarke in Hook. f. Fl. Brit. Ind. vi. 674 (1894).

M. **mariscoides** (Muhl.) Kuntze, forma **congestus** (Fernald), n. comb. *Cladium mariscoides*, forma *congestum* Fernald, Rhodora, xxiii. 234 (1922).

M. **Martii** (Defour), n. comb. *Isolepis Martii* (Defour) Roem. & Schultes, Syst. ii. 117 (1817). *Scirpus Martii* Defour ex Roem. & Schultes, l. c. (1817) in synonymy. *Cladium giganteum* Willkomm in Willkomm & Lange, Prodr. Fl. Hisp. i. 136 (1861). *C. Martii* (Defour) Richter, Pl. Eu. i. 144 (1890).

M. **Melleri** (Baker), n. comb. *Cladium Melleri* Baker, Journ. Linn. Soc. xxi. 451 (1885).

M. **micranthes** (C. B. Clarke), n. comb. *Cladium micranthes* C. B. Clarke, Kew Bull. Add. Ser. viii. 46 (1908).

M. **Milnei** (C. B. Clarke), n. comb. *Cladium Milnei* C. B. Clarke, Kew. Bull. Add. Ser. viii. 46 (1908).

M. **Muelleri** (C. B. Clarke), n. comb. *Cladium Muelleri* C. B. Clarke, Kew Bull. Add. Ser. viii. 47 (1908).

M. **platyphyllus**, n. nom. *Cladium latifolium* Merrill, Philipp. Journ. Sci., Bot. ii. 262 (1907), not *Mariscus latifolius* Schrad. ex Nees in Mart. Fl. Bras. ii. pt. 1: 50 (1842).

M. **pantopodus** (Baker), n. comb. *Cladium pantopodum* Baker, Journ. Linn. Soc. xxi. 451 (1885).

M. **pulcher** (Ridley), n. comb. *Cladium pulchrum* Ridley, Journ. Fed. Mal. States Mus. vi. 192 (1915).

M. RESTIOIDES (Sw.) Kuntze, var. **effusus** (Griseb.), n. comb. *Machaerina restioides*, var. *effusa* Griseb. Mem. Am. Acad. Sci., N. S. viii. 535 (1860). *Cladium restioides*, var. *effusa* (Griseb.) C. B. Clarke in Urban, Symb. Antill. ii. 136 (1900).

M. RIPARIUS (Nees) Kuntze, var. **crassus** (Thwaites), n. comb. *Baumea crassa* Thwaites, Enum. Pl. Zeyl. 353 (1864). *Cladium riparium*, var. *crassa* (Thwaites) C. B. Clarke in Hook. f. Fl. Brit. Ind. vi. 675 (1894).

M. **samoensis** (C. B. Clarke), n. comb. *Cladium samoense* C. B. Clarke in Stapf, Trans. Linn. Soc., Bot. Ser. 2, iv. 245 (1894).

M. **Vauthiera** (C. B. Clarke), n. comb. *Vauthiera australis* R. Rich. Ess. Fl. N. Zel. 107, t. 20 (1832), not *M. australis* (Nees) Kuntze. *Cladium Vauthiera* C. B. Clarke in Cheeseman, Man. N. Z. Fl. 788 (1906).

M. **xiphioides**, n. nom. *Cladium Drummondii* C. B. Clarke, Kew Bull. Add. Ser. viii. 91 (1908), not *Mariscus Drummondii* Steud. Syn. Pl. Cyp. 316 (1855).

GRAY HERBARIUM.

NOTES ON THE NORTH AMERICAN SPECIES OF LIMONIUM.

S. F. Blake.

Several years ago I published[1] in Rhodora a revision of the sea lavenders (*Limonium*) of North America and Mexico. Two principal groups were recognized, one, characterized by a glabrous calyx, containing three species, two of the eastern coast and one of the western; the other, marked by a pubescent calyx, containing six species, of which five were eastern and one western. At the time this revision was published only one specimen from the region between New Jersey and North Carolina had been available for examination. This was a plant collected by Clayton in Virginia, which was not clearly referable to any of the nine species described. Recent examination of the material of the genus in the United States National Herbarium, including a number of specimens from the area just mentioned, has brought out several extensions of range and led to the reduction to varietal rank of two species recognized in my previous paper.

Limonium angustatum, hitherto known only from Florida and Texas, proves to occur in Delaware, New Jersey, and even in New York, as well as in Louisiana and Alabama. The specimen of *Berlandier* 3179 (in part) from Tamaulipas in the Gray Herbarium, referred to *L. carolinianum* in my original paper, has been sent for reexamination by Dr. B. L. Robinson. I now consider it referable rather to *L. angustatum*. In the light of the new material examined, *L. angustatum* seems to be no more than varietally separable from *L. carolinianum*.

Limonium nashii, listed only from South Carolina to Texas and Tamaulipas, is now represented by two collections from New Jersey and one from Long Island. *L. trichogonum*, listed from Newfoundland and Labrador to New Jersey, extends southward to Maryland and Virginia. Intermediate specimens from New Jersey, Maryland, and North Carolina, as well as a Louisiana specimen closely similar to *L. trichogonum*, show that this plant is better treated as a geographic variety of *L. nashii*, of definite character in New England and northward but intergrading with *L. nashii* where their ranges adjoin.

[1] Rhodora **18**: 53–66. *pl. 118–119.* 1916.

Limonium californicum, recorded only on the California coast from Humboldt County to Los Angeles County, occurs also near San Diego, where its range meets that of *L. mexicanum*, although no sign of intergradation has been seen. Specimens referable to this species have also been examined from Nevada. The following more detailed notes on some of the species are presented.

Limonium carolinianum (Walt.) Britton, as to syn. only; Blake, Rhodora **18**: 57. *pl. 118, f. A.* 1916.

Recorded in my paper from North Carolina to Florida, and from Tamaulipas. The Tamaulipas specimen (*Berlandier* 3179 in part), on reexamination, proves to be referable rather to var. *angustatum*. Additional specimens have been examined in the National Herbarium, as follows:

North Carolina: Ocracoke Island, Hyde County, 1898, *Kearney* 2280. South Carolina: Santee Club, 1909, *McAtee* 1295. Florida: Near Jacksonville, 1893, *Curtiss* 4361; 1894, *Curtiss* II. 5275; 1895, *Curtiss* II. 5581. Fort Myers, Lee County, 1916, *Standley* 12612. St. Vincent Island, 1910, *McAtee* 1848B.

The leaves of the three Curtiss specimens cited are narrow, only 1 to 1.6 cm. wide, resembling the leaves of the original material of *Statice brasiliensis* var. *angustata* Gray, but their calyces are typical of *L. carolinianum*.

Limonium carolinianum var. **angustatum** (Gray) Blake.

Statice brasiliensis var. *angustata* Gray, Syn. Fl. N. Amer. **2**[1]: 54. 1878.

Limonium angustatum Small, Bull. Torrey Club **24**: 488. 1897; Blake, Rhodora **18**: 58. *pl. 118, f. B.* 1916.

Limonium carolinianum Mohr, Contr. U. S. Nat. Herb. **6**: 663. 1901. Not *Statice caroliniana* Walt.

Statice angustata Wangerin, Zeitschr. Naturw. Halle **82**: 439. 1911.

The supposed difference in character of bractlets between *L. angustatum* and *L. carolinianum* breaks down completely in the series examined, leaving nothing to separate the two plants but the difference in the calyx lobes. As specimens occur intermediate in calyx characters, it seems necessary to subordinate *L. angustatum* to *L. carolinianum* as a variety. The extension of range for this plant to

New York, New Jersey, and Delaware is noteworthy. Of the following cited specimens, all except three are in the National Herbarium.

New York: New Dorp, Staten Island, 5 Sept. 1895, *Pollard*. New Jersey: Weehawken, 14 Sept. 1895, *Van Sickle*. Port Norris, 1890, *J. H. Holmes*. Cape May, 28 Aug. 1917, *A. Gershoy* 561 (Gray Herb.). Delaware: Cedar Creek, 10 Sept. 1875, *Commons* (Gray Herb.). Florida: Manatee, *Simpson*. Without definite locality, *Chapman Herbarium* (intermediate between *carolinianum* and *angustatum*). St. Vincent Island, 1910, *McAtee* 1833 (intermediate). Alabama: Mobile County, 1870, *Mohr*. Louisiana: Vicinity of Cameron, 1910, *McAtee* 1921. Texas: Galveston, 18 Sept. 1877, *Ward* (mixed with *L. nashii*). Galveston Island, 1901, *Tracy* 7474. Tamaulipas: Field near Santa Teresa, Oct. 1830, *Berlandier* 3179 in part (Gray Herb.; referred in my former paper to *L. carolinianum*).

Tracy 7474, as represented in the Gray Herbarium, was *L. nashii* Small, but the specimen in the National Herbarium is definitely *L. carolinianum* var. *angustatum*. Both plants were previously known from this locality.

Limonium mexicanum Blake, Rhodora **18**: 59. *pl. 118, f. C*. 1916

Additional specimens examined in the National Herbarium:

California: Bay of San Francisco, *Wilkes Expedition*. San Diego, 1875, *Palmer*, 154; same locality, 1889, *Vasey*. Chula Vista, near San Diego, 1915, *Collins & Kempton* 333.

The Wilkes Expedition specimens unquestionably belong to *L. mexicanum*, having a perfectly glabrous calyx, and represent a noteworthy extension of range.

Limonium nashii Small; Blake, Rhodora **18**: 61. *pl. 118, f. D*. 1916.

Statice tracyi Gand. Bull. Soc. Bot. France **66**: 221. 1919.

Gandoger's *Statice tracyi* is based primarily on *Tracy* 6475, from St. Vincent, Florida; a specimen from Texas (*Leybold*) is also cited. In my revision (p. 61) I called attention to *Tracy* 6475 as a very puzzling plant. In the light of the variation exhibited by the more abundant material now available, the differences there commented on are seen to be of little importance, and I have no hesitation in reducing *Statice tracyi* to synonymy. The following additional specimens referable to *L. nashii* are in the National Herbarium:

New York: Cedar Point, Long Island, 8 Sept. 1879, *J. Schrenk*. New Jersey: Pleasantville, 1 Oct. 1916, *Tidestrom* 8015. Cold

Spring, Cape May County, 4 Aug. 1909, *Pennell* 2180. Georgia: Tybee Island, Chatham County, 29 Sept. 1900, *Harper* 748. Florida: St. Augustine, Sept. 1848, *Rugel* 307. Texas: Galveston, Sept. 1839, ——; same locality, 18 Sept. 1877, *Ward*. Vicinity of Corpus Christi, Oct. 1913, *Rose* 18085. Without definite locality, *Mexican Boundary Survey under Emory* 708.

Limonium nashii var. **trichogonum** Blake.

Limonium trichogonum Blake, Rhodora **18**: 61. *pl. 119, f. E.* 1916.

At the time this plant was described as a new species, I had seen no material of the group of species with hairy calyx from the area between New Jersey (the southernmost locality for *L. trichogonum*) and South Carolina (the northernmost locality for *L. nashii*). The dozen or more specimens now available from New York to Virginia and the Carolinas show that the two plants, although distinct enough in their proper areas, intergrade in the intermediate region, and that *L. trichogonum* is better treated as a northern variety of *L. nashii*. The following specimens in the National Herbarium are *intermediate* between the two forms:

New Jersey: Weehawken, 30 Aug. 1894, *Van Sickle*. Maryland: Shore of Potomac River, Rock Point, Charles County, 2 Oct. 1921, *Blake* 8432. North Carolina: Without definite locality, 1888, *G. McCarthy* (nearer *trichogonum*). Louisiana: Isle à Pied, 13 Aug. 1900, *Tracy & Lloyd* 264 (nearer *trichogonum*).

All the New England material examined is typical of *L. nashii* var. *trichogonum*. The following additional specimens, referable to var. *trichogonum*, are at hand in the National Herbarium:

New Jersey: Atlantic City, 1867, *I. S. Moyer*. Maryland: St. Mary's City, 22 Aug. 1905, *C. D. Mell*. Virginia: Fortress Monroe, 1879, *Vasey*. Smith's Island, 1 Oct. 1897, *Wm. Palmer*.

The specimen collected by Clayton (no. 573) in Virginia, and now in the British Museum, which was referred to in my previous paper (p. 63) as having the calyx teeth of *L. trichogonum* but the glabrous tube of *L. carolinianum*, probably belongs to *L. carolinianum* var. *angustatum*.

Limonium californicum (Boiss.) Heller; Blake, Rhodora **18**: 64. *pl. 119, f. G.* 1916.

This species, previously known on the California coast from Humboldt County to Los Angeles County, extends southward to the

vicinity of San Diego; and Nevada specimens, although differing in slight details, must be referred here. Two or three of the calyx ribs are sometimes glabrous or nearly so in this species. The following additional material has been examined in the National Herbarium:

California: Near San Francisco, 1863, *Bolander* 2428. Alviso, Santa Clara County, Sept. 1902, *Elmer* 4218. Ocean Beach, near San Diego, 17 Aug. 1894, *Mearns* 4036 (in Nat. Herb.; but the specimen of this number in Gray Herb. is *L. mexicanum*). Without definite locality, *C. Wright*. Nevada: Ten miles from Stone's Ferry, altitude 425 meters, 11 April 1894, *Jones* 5032m. Muddy Creek, altitude 610–915 meters, 1898, *Purpus* 6157.

Limonium limbatum Small; Blake, Rhodora **18**: 64. *pl. 119, f. H.* 1916.

The following additional specimens of this very distinct species have been examined in the National Herbarium.

Texas: Near Pecos City, 14 Oct. 1913, *Rose & Fitch* 17912. Stockton, June 1881, *Havard*. New Mexico: Roswell, June 1899, *J. D. Tinsley* 14. Tularosa, 4 Dec. 1902, *J. H. Gaut*. Nine miles south of Tularosa, *C. H. T. Townsend* 6. Malone's Ranch, 16 July 1895, *Wooton*. Morgan's Ranch, altitude 1125 meters, 16 July 1895, *Wooton*. Malone's Crossing, 22 Aug. 1899, *Wooton*.

The key given in my original paper (p. 57) may now be revised, as follows:

Key to North American Species of Limonium.

Calyx glabrous (rarely with one or two hairs in nos. 1a and 2).
  Branchlets loosely flowered; Atlantic Coast species.
    Calyx lobes deltoid or oval, obtuse or rounded to acute, usually 0.5–0.7 mm. long; North Carolina to Florida.
      1. *L. carolinianum* (Walt.) Britton.
    Calyx lobes triangular-ovate, acute or subacuminate, 0.7–1 mm. long; New York to Texas and Tamaulipas.
      1a. *L. carolinianum angustatum* (Gray) Blake.
  Branchlets densely flowered; California and Lower California.....2. *L. mexicanum* Blake.
Calyx densely pubescent at least at base.
  Calyx limb erect.
    Calyx (5.3) 6–7.5 mm. long, its lobes 1–1.7 mm. long.
      Scape strongly branched from near the base; innermost bractlet 5–6 mm. long; Tamaulipas
        3. *L. endlichianum* (Wangerin) Blake.
      Scape branched from near the middle; innermost bractlet 3.8–5.5 mm. long.
        Calyx pubescent only at base or on one or two of the ribs to the middle; New York to Texas and Tamaulipas.....4. *L. nashii* Small.

Calyx densely pubescent to middle or above on all the ribs; Newfoundland and Labrador to Virginia.....4a. *L. nashii trichogonum* Blake.
Calyx 4.3–5.5 mm. long, its lobes 0.4–0.8 mm. long.
Calyx lobes obtuse to subacute; hairs of calyx ca. 0.5–0.6 mm. long; branchlets loosely flowered; Florida.
5. *L. obtusilobum* Blake.
Calyx lobes acute or acutish; hairs of calyx ca. 0.2–0.3 mm. long; branchlets densely flowered; California, Nevada.....6. *L. californicum* (Boiss.) Heller.
Calyx limb spreading at maturity; Texas, New Mexico.
7. *L. limbatum* Small.

Bureau of Plant Industry, Washington, D. C.

REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—XL.

SOLANACEAE.

DATURA.

D. inermis Jacq. Malden, introduced (*F. S. Collins*, Aug. 10, 1881); rubbish heap, Cambridge (*W. Deane*, Sept. 23, Oct. 2, 1884). Adventive from Africa.

D. Metel L. In shingle at Phillips Beach, Swampscott (*C. W. Swan*, 1888). Specimen in herb. N. E. Botanical Club.

D. meteloides DC. Rubbish heap, Cambridge (*W. Deane*, Sept. 17–18, Oct. 14, 1885). Specimen in herb. W. Deane.

D. Stramonium L. Waste places; occasional, especially in Boston and along the coast.

D. Tatula L. Waste places, same range as *D. Stramonium*.

HYOSCYAMUS.

H. niger L. A rare weed at Ipswich, Westford, Somerville, Cambridge and Boston; other reports without specimens cited in J. Robinson, Fl. Essex Co. 86, 1880.

LYCIUM.

L. chinense Mill. Boston (*S. S. Clark*, Nov. 10, 1915). Specimen in herb. Gray. Native of China.

L. halimifolium Mill. Persistent and escaping in many places.

LYCOPERSICUM.

L. esculentum Mill. Old gardens and waste places, seldom appearing for more than one year and hardly a part of the flora.

NICANDRA.

N. PHYSALODES (L.) Pers. Waste places, occasional.

NICOTIANA.

N. BIGELOVII Wats. Woolwaste, N. Chelmsford (*W. P. Alcott*, July 1, 1879); also Lowell (*C. W. Swan*) according to Dame & Collins, Fl. Middlesex Co. 80, 1888.

N. LONGIFLORA Cav. Dump, Granite Ave., Dorchester (*N. T. Kidder*, Oct. 7, 1919). Specimen in herb. N. T. Kidder.

N. RUSTICA L. One plant near dump (*M. L. Fernald & B. Long*, Aug. 28, 1913). Specimen in herb. N. E. Botanical Club.

PETUNIA.

P. AXILLARIS (Lam.) BSP. Occasional in waste land and vacant lots. Originally a native of Argentina.

P. VIOLACEA Lindl. Vacant lots and waste land, rare.

PHYSALIS.

All the specimens reported in Dame & Collins, Fl. Middlesex Co., 1888, are here included, though most of the names have been superseded.

P. ANGULATA L. Dump, Cambridge (*M. L. Fernald*, Sept. 26, 1908). Specimen in herb. Gray.

P. heterophylla Nees. Dry fields, frequent.

P. heterophylla Nees., var **ambigua** (Gray) Rydb. Meadow and waste land, Sherborn (*Miss M. L. Loomis*, June 19, 1911 et seq.). Probably elsewhere.

P. IXOCARPA Brotero. Rubbish heap, Cambridge (*W. Deane*. Sept. 24–25, 1884). Specimen in herb. W. Deane.

P. LONGIFOLIA Nutt. Waste place, Woburn (*F. W. Grigg*, Sept. 6, 1919, Oct. 11, 1921).

P. PRUINOSA L. Waste places, doubtfully native; Lowell, Lynn, Revere, Cambridge, Boston, Braintree.

P. subglabrata Mackenzie & Bush. Moist soil, Charlestown (*C. E. Perkins*, Sept. 6, 1911); Medford (*C. H. Knowlton*, Oct. 3, 1903); Newton (*F. W. Grigg*, Aug. 13, 1895).

P. VIRGINIANA Mill. Woolen mills, Westford (*Mrs. J. P. Riese*, May 30, 1918). Specimen in herb. Gray.

SOLANUM.

S. CAROLINENSE L. Waste places, rare (12 stations).

S. CITRULLIFOLIUM A. Br. Old brickyard, Cambridge, many plants (*M. L. Fernald*, Sept. 26, 1908); dump (*M. L. Fernald & B. Long*, Aug. 28, 1913). Specimens in herb. Gray and N. E. Botanical Club.

S. DULCAMARA L. Swamps, brooks and waste places, common throughout.

S. DULCAMARA L., var. VILLOSISSIMUM Desv. See RHODORA xxiv, 202, 1922. Rare, at Groveland, Burlington and Cambridge. In Europe this variety grows in drier places than *S. Dulcamara*.

S. nigrum L. Rich soil, also in gravel on sea-beaches; frequent throughout.

S. nigrum L., var. DILLENII Gray. Dump, W. Cambridge (*M. L. Fernald*, Sept. 26, 1908; *M. L. Fernald & B. Long*, Aug. 28, 1913). Specimens in herb. Gray and N. E. Botanical Club. Native from Florida to S. America.

S. PSEUDO-CAPSICUM L. Dump, Garden St., Cambridge (*F. W. Grigg & R. A. Ware*, Oct. 11, 1919); Fenway, Boston (*A. S. Pease*, Oct. 16, 1906). A tropical species, introduced by florists.

S. ROSTRATUM Dunal. Gardens and waste places, occasional.

S. SISYMBRIIFOLIUM Lam. Rubbish heap, Cambridge (*W. Deane*, Oct. 5, 7, 1884, Sept. 15, 1885; *M. L. Fernald & B. Long*, Aug. 28, 1913).

S. TUBEROSUM L. Waste places, occasional, but hardly a part of the flora.

SCROPHULARIACEAE.

AGALINIS (Purple Gerardia).

See F. W. Pennell, article in Torreya xix. 205–216, 1919. The plants of this genus are at least in part parasitic on herbs.

A. acuta Pennell. (*Gerardia parvifolia* of Gray's Manual, 7th ed.). Dry sandy soil, Natick (*F. F. Forbes*, Sept. 17, 1905; Aug. 27, 1908). Specimen in herb. Gray.

A. maritima (Raf.) Raf. Salt marshes, common from Salisbury to Duxbury.

A. paupercula (Gray) Britton. Swamps and meadows, sometimes on brackish marshes, common throughout.

A. purpurea (L.) Pennell. Moist soil, Chelsea, Winthrop, Needham, Newton; probably more frequent in southern towns, but not reported.

A. tenuifolia (Vahl.) Raf. Sandy soil; apparently common, but no reports from southern towns.

ANTIRRHINUM.

A. MAJUS L. Dump on steep river bank, Newburyport (*D. White*, Sept. 13, 1913); waste place near salt marsh, Nahant (*F. W. Grigg*, Aug. 26, 1911). Native of the Mediterranean region.

AUREOLARIA. (Yellow Gerardia).

See F. W. Pennell, article in Torreya xix. 205–16. 1919.

These plants are at least partly parasitic on roots of oaks and other hardwood trees.

A. flava (L.) Farwell. (*Gerardia virginica* of Gray's Manual, of 7th ed.). Dry open woods; apparently well distributed.

A. pedicularia (L.) Raf. Dry sandy clearings and borders of woods, common.

A. virginica (L) Pennell. (*Gerardia flava* of Gray's Manual, 7th ed.). Rich open woods; not reported from southeastern towns, but frequent elsewhere.

CASTILLEJA.

C. coccinea (L.) Spreng. Meadows and swamps, rare; from Boxford, Andover, Dracut and Dunstable south to Franklin, but not known on the coast nor in Plymouth Co. Yellow form even more rare.

CHELONE.

C. glabra L. Swamps and low ground around brooks; common throughout.

DIGITALIS.

D. LANATA Ehrh. Waste heap, Rowley (*Miss H. R. Towne*, July 20, 1918; *J. D. Sornborger*, 1918). Specimens in herb. Gray and Peabody Acad. Sci. Native in the Danube region and in Greece.

D. PURPUREA L. Escape in open woods near leaf-dump, W. Manchester (*F. T. Hubbard*, June 23, 1913). Specimen in herb. N. E. Botanical Club.

GRATIOLA.

G. aurea Muhl. Wet sandy shores of fresh water, common throughout. White form occasional.

G. neglecta Torr. (*G. virginiana* of Gray's Manual). See Rhodora xx. 65, 1918. Moist rich soil; occasional in Essex, Middlesex and Norfolk counties.

ILYSANTHES.

I. inaequalis (Walt.) Pennell. (*I. anagallidea* (Michx.) Raf.) See Pennell (Torreya, xxii. 83, 1922). Wet sandy and gravelly shores of ponds; frequent, but no reports from southern towns.

I. dubia (L.) Barnhart. Wet places, often on shores; frequent, but no reports from Plymouth Co. (in our area).

LIMOSELLA.

L. subulata Ives. (*L. aquatica* L., var. *tenuifolia* of Gray's Manual). See Rhodora xx. 160–164, 1918. Above Chain Bridge, Newburyport (*E. Moulton*, Aug. 22, 1886); salt-marsh mud flats of Ipswich River, Ipswich (*J. H. Sears*, July 23, 1886). Specimens in herb. Peabody Acad. Sci. and Gray.

LINARIA.

L. canadensis (L.) Dumont. Dry sandy soil, sometimes in moister places; common throughout.

L. Cymbalaria (L.) Mill. Dump, Lowell (*C. W. Swan*, Aug. 4, 1884); waste heap, Malden (*F. S. Collins*, June 26, 1886); Sherborn (*Miss M. L. Loomis* Dec. 3, 1912); Milton, weed about greenhouse (*N. T. Kidder*, June 28, 1921).

L. Elatine (L.) Mill. "In siccis apricis argillaceis ad Ipswich" (*Wm. Oakes*, no date); weed in garden among grass, Cambridge (ex. herb. H. G. Jesup, August, 1877).

L. genistaefolia (L.) Mill. Fields and roadsides, well naturalized at Groton (*C. H. Knowlton*, Sept. 1905 to date). Introduced from Europe.

L. repens Mill. About six plants escaped on Mill St., Waverley [Belmont] (*W. Deane*, June 24, 1900). Native of Europe.

L. supina Desf. Medford (*Wm. Boott*, July 10, 1863). Specimen in herb. Gray.

L. vulgaris Hill. Roadsides, fields and waste places; very common throughout.

L. minor (L.) Desf. Cambridge gravel pathway in Botanic Garden (*F. W. Hunnewell*, Sept. 12, 1914). Specimen in herb. F. W. Hunnewell.

MELAMPYRUM.

M. lineare Lam. Dry open woods, common.

MIMULUS.

M. BREVIPES Benth. Sown by wool refuse, N. Chelmsford (*W. P. Alcott*, June 21, 1879). Specimen in herb. Peabody Acad. Sci.

M. moschatus Dougl. Cold brook, Lexington (*F. S. Piper*, Aug. 11, 1912). Specimen in herb. Gray.

M. ringens L. Meadows, swamps and wet shores; common throughout.

ORTHOCARPUS.

O. PURPURASCENS Benth. Woolwaste, N. Chelmsford (*W. P. Alcott* June 24, 1879). Specimen in herb. Peabody Acad. Sci. An annual from the coastal region of California.

PEDICULARIS.

P. canadensis L. Fields, meadows and open woods; common throughout.

P. lanceolata Michx. "Revere, just over the line" (. . . . *Moody*, no date). Specimen in herb. N. E. Botanical Club.

PENTSTEMON.

P. hirsutus (L.) Willd. Dry soil, rare; ten scattered stations.

P. LAEVIGATUS Ait. A rare introduction found at Haverhill, Groveland, Marblehead and Needham.

P. LAEVIGATUS Ait., var. DIGITALIS (Sweet) Gray. Fields, introduced in grass seed, rare; Rowley, Haverhill, Groveland, Hamilton, Andover, Lexington.

RHINANTHUS.

R. Crista-galli L. Rockport (*J. H. Sears*, June 30, 1885; *F. F. Forbes*, July 3, 1904); Stony Brook Reservation, old house site, W. Roxbury (*N. T. Kidder*, June 24, 1920).

R. Crista-galli L., var. **fallax** (Wimm. & Grab.) Druce. See RHODORA xii. 143, 1910. Near seashore. Rockport (*F. F. Forbes*, July 5, 1903). Specimen in herb. Gray.

SCHWALBEA.

S. americana L. Center St. near water tower, S. Weymouth (*E. & C. E. Faxon*, Sept. 9. 1886, July 16, 1887). Specimens in herb. Gray.

SCROPHULARIA.

S. lanceolata Pursh. (*S. leporella* Bicknell). See Pennell (Torreya, xxii. 84, 1922). Moist soil, often in shade; occasional.

S. marilandica L. Rich open woods; rare, Sangus, Lynn, Lexington, Revere, Concord, Boston: Roxbury (*John A. Lowell*, 1846).

S. nodosa L. Thicket, Cambridge (*M. L. Fernald*, Sept. 1, 1892, the colony spreading and now of considerable extent); about a dump, Cambridge (*M. L. Fernald & B. Long*, Aug. 28, 1913). Specimens in herbs. Gray and N. E. Botanical Club. Naturalized from Europe.

VERBASCUM.

V. Blattaria L. Pastures and waste places, rare (11 stations).

V. Lychnitis L. Westford (*W. E. Coburn*, 1887). Specimen in herb. N. E. Botanical Club.

V. phlomoides L. Introduced in woolwaste at Gloucester, Westford, Medford, Weston and Plainville.

V. nigrum L. Tapleyville, Danvers (*J. H. Sears*, Aug. 8, 1879). Adventive from Europe, probably in wool. Specimen in herb. Peabody Acad. Sci.

V. Thapsus L. Pastures and dry soil; very common throughout.

VERONICA.

For nomenclatorial changes and descriptions of new species and varieties in this genus see articles by F. W. Pennell in Rhodora xxiii. 1–22, 29–41.

V. agrestis L. College campus, Wellesley (*K. M. Wiegand*, March 22, 1913); Roxbury (*John A. Lowell*, May 7, 1846); specimens in herb. Wellesley College, and Bost. Soc. Nat. Hist. Reported also from Reading and Framingham in Dame & Collins, Fl. Middlesex Co. 69, 1888.

V. americana Schwein. Cold wet places, rare: Westford, Danvers, Peabody, Brookline.

V. arvensis L. Dry soil, frequent.

V. Chamaedrys L. Waste places and vacant lots, rare: Andover, Newburyport, Gloucester, Cambridge, S. Boston, Braintree, Wellesley.

V. glandifera Pennell. (*V. Anagallis-aquatica*, in part, of Gray's Manual.) Ipswich (*Wm. Oakes*, no date). Specimens in herbs. Gray and Boston Society of Natural History.

V. LATIFOLIA L. (*V. Teucrium* of Gray's Manual, 7th ed.) Roadside escape, Chelmsford (*C. H. Knowlton*, June 14, 1902); Sharon (*S. F. Poole*, June 1905).

V. LONGIFOLIA L. (*V. maritima* L.) Roadsides and waste land, rare (nine stations).

V. officinalis L. Dry open woods; rather common elsewhere, but apparently rare in Essex and Plymouth Counties.

V. PEREGRINA L. Weed in moist places; frequent except in southern towns.

V. PEREGRINA L., var. XALAPENSIS (H.B.K.) Pennell. In similar situations, about as frequent as the species.

V. PERSICA Poir. (*V. Tournefortii* C. C. Gmelin.) Newburyport (*E. Moulton*, 1886); Georgetown (*Mrs. C. N. S. Horner*, 1886); weed in Prof. D. L. Sharp's garden, Hingham (*C. H. Knowlton*, May 14, 1916).

V. scutellata L. Wet places, common.

V. serpyllifolia L. Fields, lawns and gardens; common throughout.

[*V. spicata* L. Reported from roadside, N. Chelmsford (*C. W. Swan*) in Dame & Collins, Fl. Middlesex Co. 69, 1888, but specimen is not available for examination.]

C. H. KNOWLTON } *Committee on*
WALTER DEANE } *Local Flora.*

SALIX SERISSIMA ON LONG'S PEAK.—Mr. Carleton R. Ball, Botanical Gazette, lxxii. 221 (1921), in speaking of the distribution of *Salix serissima* (Bailey) Fernald says that recent collections have extended its known range "southwestward to Pembina and Rolette Counties in North Dakota and to Flathead County, Montana" and that "It is quite possible that further search will extend the range both north and south in the Rocky Mountains."

In 1913, while collecting on Long's Peak, Colorado, I found a willow which I took to be this species, growing in an alpine meadow at an altitude of about 9,000 feet. Professor Fernald, to whom I have recently shown my specimen, has confirmed my identification.

This new station carries out Mr. Ball's prediction and extends the range of the species in the Rocky Mountains about 500 miles southward of the previously recorded stations in Montana.—Francis Welles Hunnewell, Wellesley, Massachusetts.

Lepachys columnaris in eastern Massachusetts.—Last July, a plant was found near the railroad station at South Billerica and was brought to me for name. It was a very poor specimen, but appeared to be *Lepachys columnaris*, Torr. & Gray. The Gray Herbarium has since confirmed my opinion and stated that no specimen of this species had been received from this region and that one would be welcome. This I was unable to get, as there was but one plant and the root had been transplanted to a garden. It was thought that the seed might have been brought in baled hay which was unloaded at the station.—Charles W. Jenks, Bedford, Massachusetts.

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